MODEL C 15FB

1. PRECAUTIONS IN DISASSEMBLY AND REASSEMBLY:

The circled numbers in the descriptions below correspond to the item numbers in the Parts List and exploded assembly diagram.

[CAUTION] Prior to commencing disassembly (including replacement of the saw blade), ensure that the plug is disconnected from the power source.

1-1. Disassembly:

(1) Disassembly of the Base and Turn Table:

Tools Required:

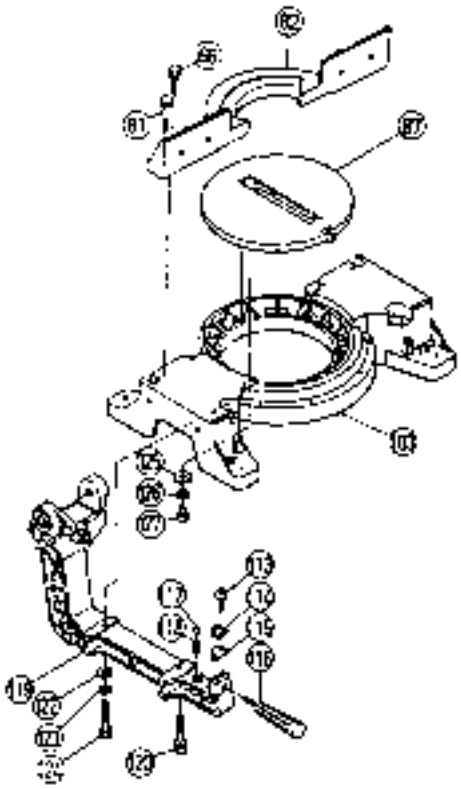
- 17 mm Box Spanner

A. After removing the M10 x 65 Bolt **[120]** and M10 x 65 Screw (G) **[124]** which fix the Hinge **[119]**, the Hinge **[119]** and upper portions (Gear Case, etc.) can be separated from the main body.

B. Remove the four M10 x 40 Bolts **[66]** which fix Vise (B) **[82]**, and separate Vise (B) **[82]** from the Base Ass'y **[103]**.

C. Remove the two M6 x 16 ⊕ -Hd. Machine Screws **[127]**. The Turn Table **[87]** can then be removed by pushing it up lightly from the rear portion of the Base Ass'y **[103]**.

[NOTE] When removing the Hinge **[119]**, be very careful not to lose the D12.7 Steel Ball **[117]** and Sprint (C) **[118]**.



(2) Disassembly of the Spring Section and the Sleeve:

Tools Required:

- 17 mm Wrench, 10 mm Wrench, 6 mm Hex. Bar Wrench, and Plus Screwdriver

A. This step of disassembly is dangerous and requires close attention at all times. Particular caution is necessary after releasing the fixing device (paragraph D.).

B. Push the Gear Case **[53]** forward and down to its lowered position, and lock it in that position with the fixing device (push in the Set Pin **[97]** to engage the Grip **[100]**).

C. Loosen the M10 Lock Nut **[96]**, and screw the M10 x 40 Bolt **[95]** fully into the Hinge **[119]**.

D. Being very careful as cautioned above, release the fixing device (Set Pin **[97]** and Grip **[100]**) and slowly and carefully raise the Gear Case **[53]**.

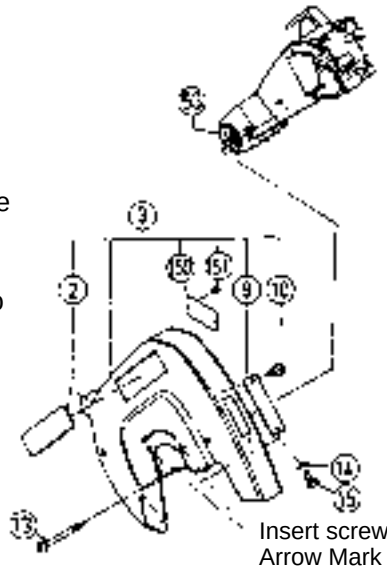
E. Loosen the two M6 x 10 Hexagon Socket Hd. Set Screws **[54]**, and remove the M12 Lock Nut **[92]** and M12 Nut **[93]**. Next, gently pull out the Hinge Shaft **[102]**. Finally, loosen the two M4 x 10 Flat Hd. Screws **[65]**, take off the Spring Cover **[68]**, and take out the Spring **[67]** and Sleeve **[69]**.

(3) Disassembly of the Saw Cover Section:

Tools Required:

- Plus Screwdriver

The Saw Cover Ass'y **[3]** can be disassembled by removing the M4 x 10 ⊕ -Hd. Machine Screws **[15]** and four D5 x 90 ⊕ -Hd. Tapping Screws **[13]** However, please note that to remove two of the four D5 x 90 ⊕ -Hd. Tapping Screws **[13]** it is necessary to insert the screwdriver through the holes at either end of the Arrow Mark on the Saw Cover which indicates the rotational direction of the saw blade.



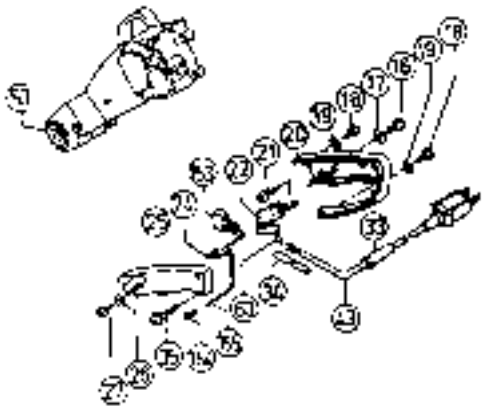
Insert screwdriver through Arrow Mark holes for disassembly and reassembly.

(4) Disassembly of the Switch and Handle Section:

Tools Required:

- Plus Screwdriver

A. When only the Switch **[22]** must be disassembled, first loosen the two M5 x 20 ⊕ -Hd. Machine Screws **[18]** and M5 x 16 ⊕ -Hd. Machine Screw **[16]** which fix the Handle **[20]**. Then loosen the two M5 x 12 ⊕ -Hd. Machine Screws **[27]** and two D4 x 25 Tapping Screws **[35]** which fix the Handle Cover **[25]**. The Handle **[20]** can then be removed from the Gear Case **[53]**.



B. After loosening the D4 x 10 ⊕ -Hd. Tapping Screws **[21]**, the Switch **[22]** can be separated from the Handle **[20]**.

(5) Disassembly of the Spindle Section and stopper Pin:

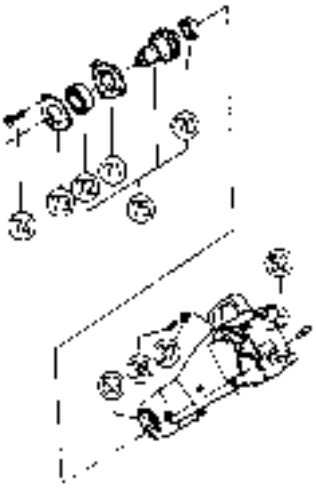
Tools Required:

- Plus Screwdriver, Pliers, Wooden or Plastic Hammer

A. Remove the Saw Cover Ass'y **[3]** by following the disassembly procedures in paragraph (3), above.

B. After extracting the D7 E-Type Retaining Ring **[37]** from the Stopper Pin **[52]**, the Stopper Pin **[52]** and Gauge Spring **[38]** can be taken out.

C. After loosening the three M6 x 25 Flat Hd. Screws **[74]**, gently tap on the saw cover side of the Gear Case **[53]** to loosen and remove the Spindle Gear Ass'y **[75]**.



(6) Disassembly of the Armature Ass'y and Stator Ass'y:

Tools Required:

- Plus Screwdriver, Nippers, Wooden or Plastic Hammer

1. Disassembly of the Armature Ass'y:

A. Remove the Saw Cover Ass'y **[3]** and handle Cover **[25]** by following the disassembly procedures in paragraphs (3) and (4), above.

B. Remove the two leadwires of the Stator Ass'y **[46]** from the Switch **[22]**. As there is another leadwire connected at the Connector **[24]**, cut off the wires as closely to the Connector as possible.

C. Remove the two Brush Caps **[55]** from the Housing Ass'y **[84],** and take out the two Carbon Brushes **[40]**.

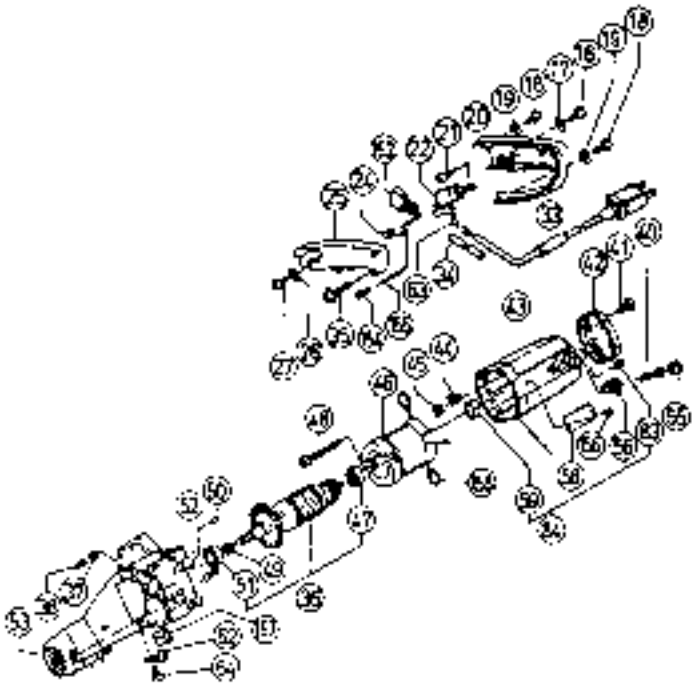
D. Remove the Armature Ass'y **[36]** from the Housing Ass'y **[84]**.

2. Disassembly of the Stator Ass'y:

A. Loosen the two D4 x 10 ⊕-Hd. Tapping Screws **[41]**, and remove the Tail Cover **[42]** from the Housing Ass'y **[84]**.

B. Disconnect the two Stator Brush Terminal Ass'ys **[158]** from the Brush Holders **[56]**.

C. Loosen the two M5 x 75 ⊕-Hd. Machine Screws **[48]** which fix the Stator Ass'y **[46]**. Then tap gently on the Gear Case mounting end of the Housing Ass'y **[84]** to loosen and remove the Stator Ass'y **[46]**.



1-2. Reassembly:

Reassembly can be accomplished by following the disassembly procedures in reverse. However, special attention should be given to the following items.

(1) If the Armature, Stator, Switch or any other electrical component has been replaced, conduct the following tests:

A. With the main switch turned ON, measure the insulation resistance between the plug prongs and exposed metal portions of the frame with a 500V DC Megohm Tester. The reading should be in excess of 7 megohms.

B. If possible, a dielectric strength test should be conducted. With a Dielectric Withstand Voltage Tester, apply 4,000 volts between the plug prongs and exposed metal portions of the frame for one (1) minute with the main switch turned ON. Confirm that there is no "flashover" or breakdown of the insulation.

C. After electrical testing has been completed, connect the plug to the power source and confirm the following:

- There is no irregular noise.
- Commutation of the Commutator portion is not excessive.
- There is no abnormal vibration.

(2) Ensure that the thickness of the vinyl tube which covers the leadwires from the Stator is in excess of 1.2 mm, and ensure that the vinyl tube completely covers the Stator leadwires all the way up to the polycarbonate portion of the Switch Handle.

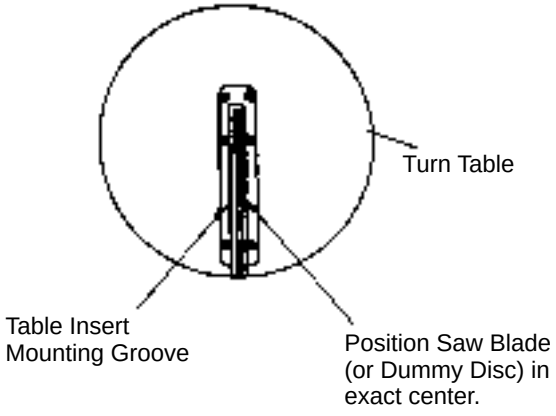
(3) If the M12 Nut and M12 Lock Nut on the Hinge Shaft are tightened excessively, it may interfere with the smooth movement of the Gear Case. If they are not tightened sufficiently, the Gear Case may move and vibrate on the Hinge, causing uneven cutting of the workpiece. Be very careful to ensure that the M12 Nut and M12 Lock Nut tightened properly to prevent vibration of the Gear Case, yet allow smooth movement of the Gear Case.

1-3. Assemblies Requiring Careful Adjustment:

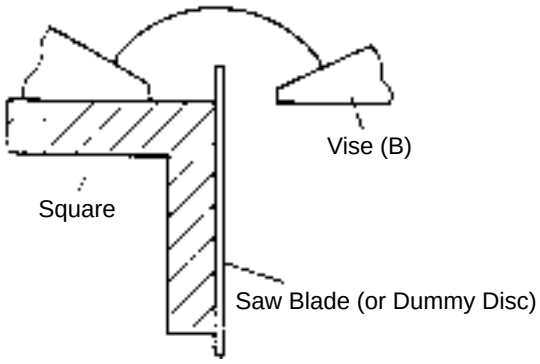
(1) Perpendicularity Adjustment of the Saw Blade (or Dummy Disc) and Vise (B):

If the Hinge is disassembled from and then reassembled to the Turn Table, it is necessary to perform necessary adjustments to ensure the perpendicularity of the Saw Blade (or Dummy Disc) and Vise (B).

A. Mount the D12.7 Steel Ball **[117]** and Spring (C) **[118]** onto the Hinge **[119]**, and temporarily fix the Hinge onto the Turn Table **[87]** with the M10 x 65 Bolt **[120]** and M10 x 65 Screw (G) **[124]**. At this time, the Table Insert **[86]** and Guard **[61]** should be removed from the Turn Table **[87]**.



B. Perform adjustment as necessary so that the Saw Blade (or Dummy Disc) is positioned exactly in the center of the Table Insert mounting groove, as illustrated left, and tighten the M10 x 65 Bolt **[120]** and M10 x 65 Screw (G) **[124]**. At this time, confirm without fail that the D12.7 Steel Ball **[117]** is properly engaged in the 0˚ setting hole in the Base Ass'y **[103]**.



C. As illustrated, left, fit a square to the side surface of the Saw Blade (or Dummy Disc), and adjust Vise (B) as necessary to ensure it is exactly perpendicular to the Saw Blade. Then thoroughly tighten the four M10 x 40 Bolts **[66]**.

D. Finnally, ensure that the arrow mark on the Indicator **[114]** is properly aligned with the 0˚ setting of the Scale **[89]**, and tighten the two M5 x 10 ⊕ -Hd. Machine Screws **[113]**.

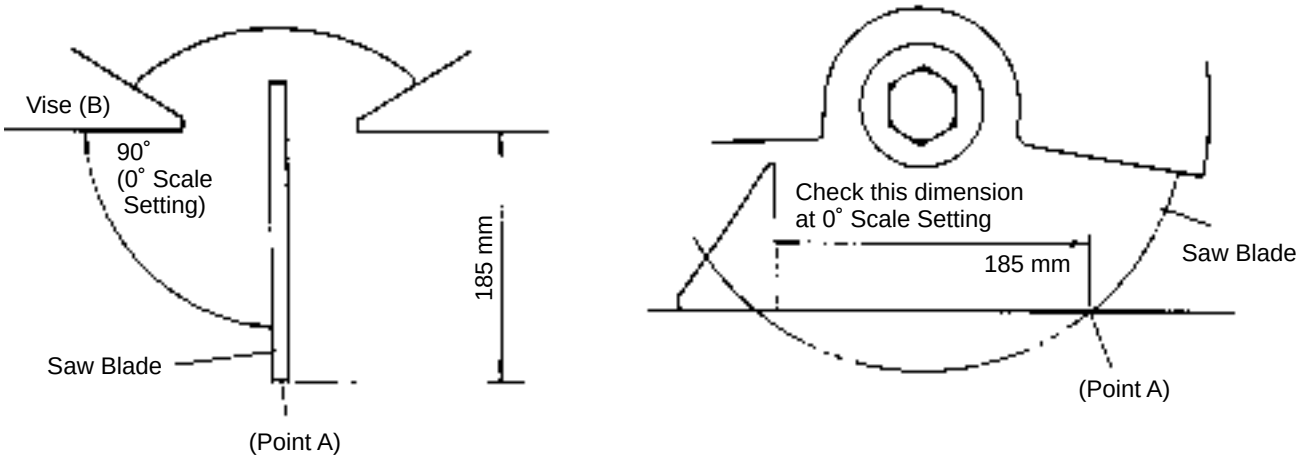
(2) Cutting Depth Adjustment:

The adjustment procedures and dimensions described below are based on the use of a 380 mm diameter Saw Blade.

A. Cutting depth adjustment procedures are described in the Instruction Manual. If the M10 x 40 Bolt **[95]** is not properly adjusted, the following may occur:

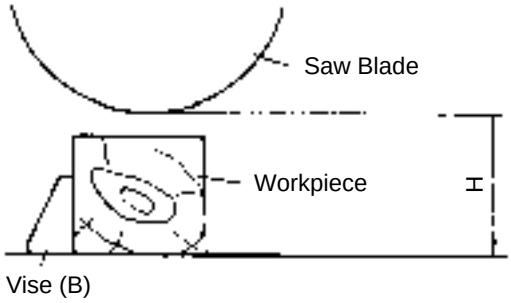
- Maximum machine cutting capacity cannot be obtained.
- The Saw Blade could cut into the Turn Table **[87]**.

B. To obtain maximum machine cutting dimensions, set the Turn Table **[87]** to the 0˚ setting, lower the Saw Blade, and perform adjustment with the M10 x 40 Bolt **[95]** so that the appropriate dimension between the surface of Vise (B) and Point A (where the Saw Blade intersects the surface of the Turn Table) is obtained, as illustrated below.



C. On completion of the above adjustment, lower the Saw Blade and ensure that it does not come in contact with the Turn Table.

(3) Saw Blade Height Setting Adjustment:



When the Gear Case **[53]** has been disassembled and then reassembled, adjust the M10 x 40 Bolt **[95]** without fail to set the Saw Blade at the most appropriate height (H) above the Turn Table for the operator to conveniently perform normal cutting operations. Details concerning adjustment procedures are listed in the Instruction Manual; study them carefully, and set the height in accordance with cutting needs.

1-4. Confirmation of Appropriate Insulation:

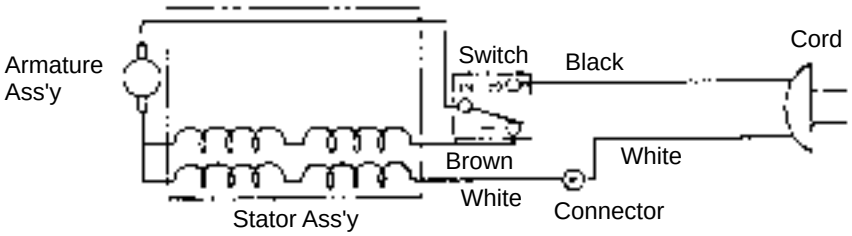
When making leadwire connections, do not remove any more of the insulation covering than is absolutely necessary. For example, ensure there are no exposed wire cores projecting from connectors, terminals, etc. In particular, carefully confirm that there are no exposed wire cores at the terminals of the Switch. In addition, carefully avoid pinching leadwires between the Handle and Handle Cover during reassembly.

1-5. Wiring Diagrams and Leadwire Arrangements:

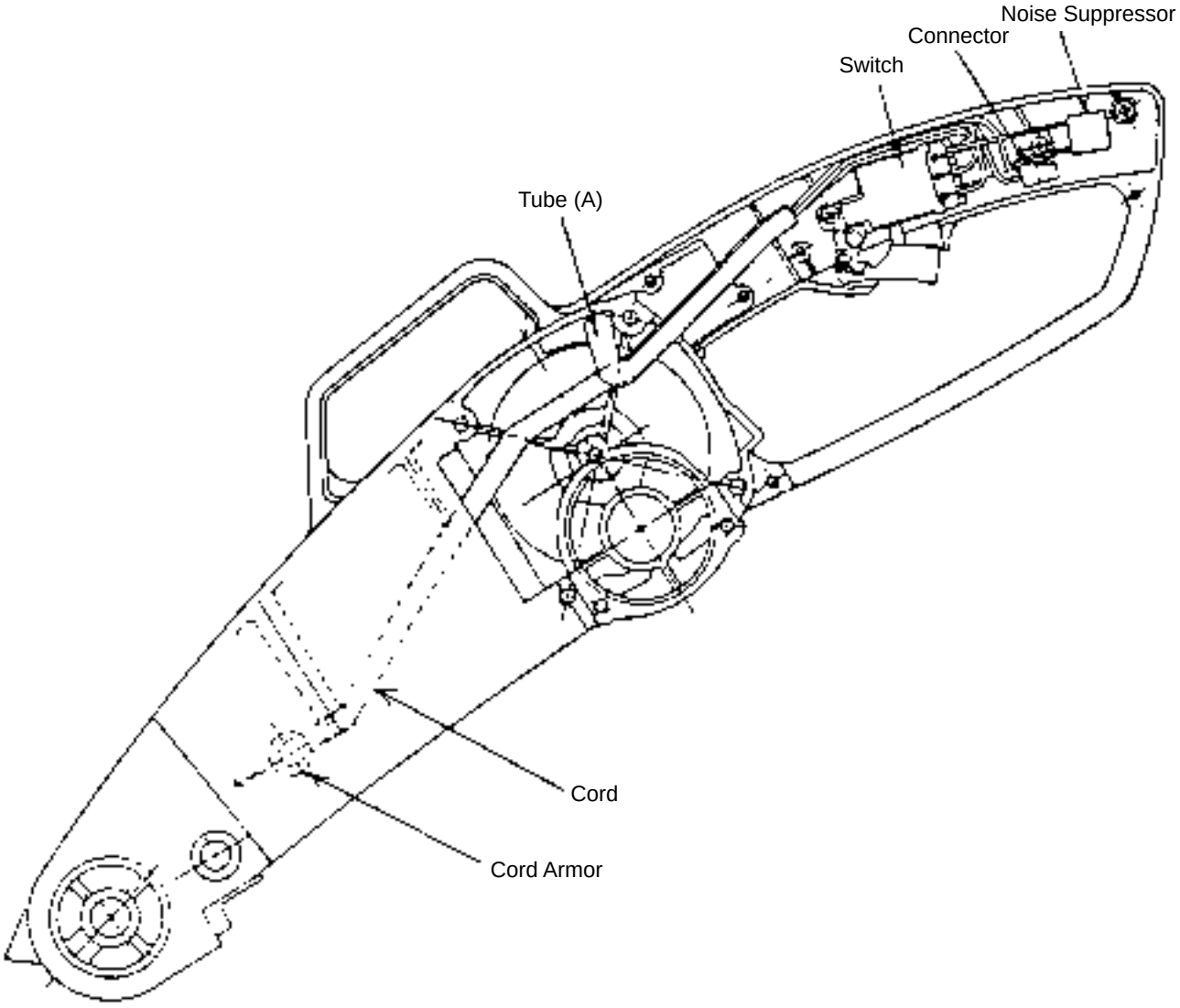
Perform wiring work as illustrated below.

(1) For Products with a Dynamic Brake (115V Specification Products for the U.S. and Canada Only):

WIRING DIAGRAM



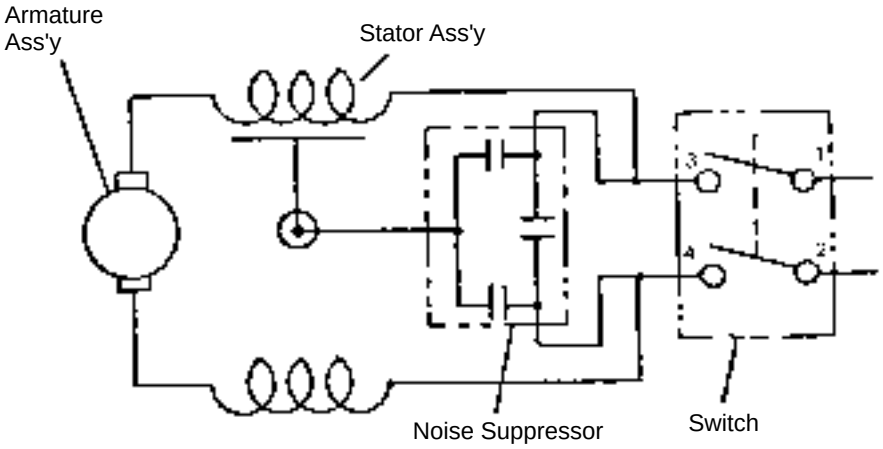
LEADWIRE ARRANGEMENT



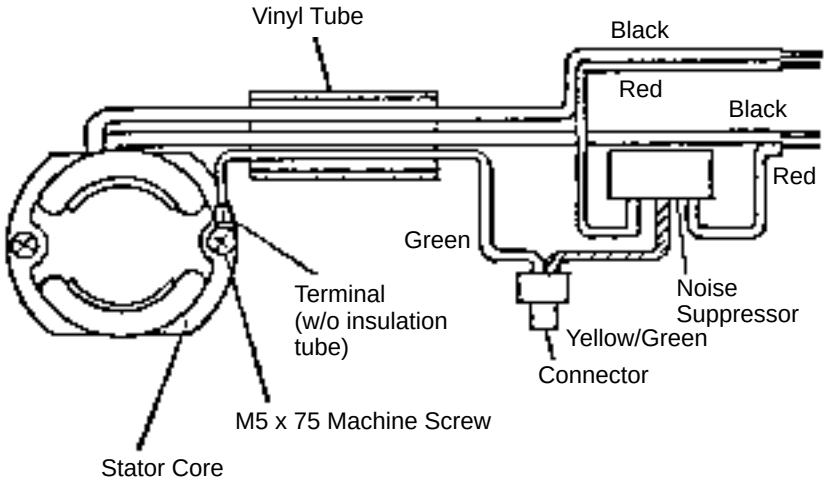
(2) For Products with a Noise Suppressor:

[NOTE] The wiring diagram for products without a Noise Suppressor is the same as that illustrated below with the exception of the Noise Suppressor section.

WIRING DIAGRAM



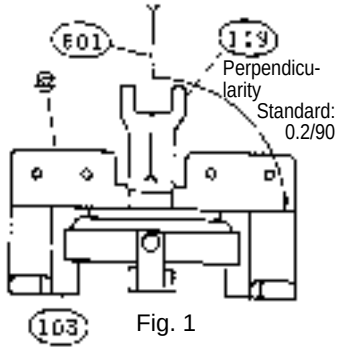
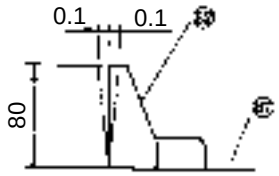
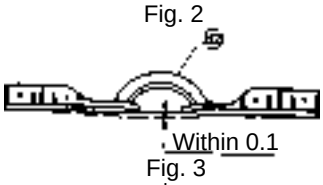
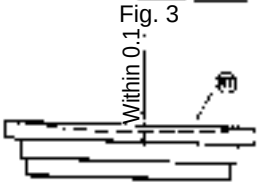
LEADWIRE ARRANGEMENT

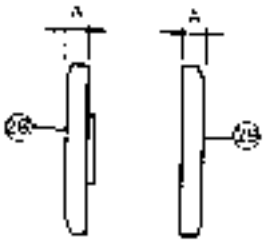


2. TROUBLESHOOTING GUIDE:

The circled numbers in the descriptions below correspond to the item numbers in the Parts List and exploded assembly diagram.

(All Dimensions in Millimeters)

Item	Phenomenon	Possible Cause (s)	Standard	Countermeasure (s)
1.	Inaccurate cutting. (Unable to obtain accurate perpendicularity of cut surface.) (Mitered joints cannot be accurately aligned.)  Fig. 1  Fig. 2  Fig. 3  Fig. 4	A. Improper perpendicularity between Vise (B) **[82]** and the Base Ass'y **[103]** causes inclined bevel cutting, resulting in inaccurate angles.	Within 0.1/80 (Fig. 2)	Adjust or replace Vise (B) **[82]**.
		B. Improper perpendicularity between Saw Blade and Turn Table **[87]** causes Saw Blade to cut into Workpiece at inclined angle.	0.2/190 (Fig. 1)	• Adjust M12 Nut **[93]** and M12 Lock Nut **[92]** to eliminate gap and vibration between Hinge **[119]** and Gear Case **[53]**. • Replace Hinge **[119]**. (If Hinge damaged or deformed) • Replace Gear Case **[53]**. (If Gear Case damaged or deformed) • Replace Turn Table **[87]**. (If Turn Table damaged or deformed)
		C. Excessive deflection of the Saw Blade. (Excessive vibration)	0.26/ϕ 370 (With Dummy Disc)	• Replace the Saw Blade. • Replace Washer (A) **[28]** and/or Washer (B) **[29]**.
		D. Turn Table **[87]** is not properly fixed with the Side Handle **[116]**, and moves during the cutting operation.	—	Securely fix the Turn Table **[87]** with the Side Handle **[116]** and recheck after next cutting.
		E. Surface of Vise (B) uneven (worn or damaged) and causes uneven cutting of the workpiece.	Within 0.1 (Fig. 3)	Replace Vise (B) **[82]**.
		F. Surface of Turn Table **[87]** uneven (worn or damaged) and causes uneven cutting of the workpiece.	Within 0.1 (Fig. 4)	Replace the Turn Table **[87]**.
		G. Excessive looseness or excessive tightening of the turn connection between the Hinge **[119]** and Gear Case **[53]** which causes either vibration or irregular movement of the Saw Blade, and subsequent uneven cutting.	—	• Check for material (chips, dust, etc.) in the joints of the Hinge **[119]**, Gear Case **[53]** and Hinge Shaft **[102]**, and clean as necessary. • Readjust M12 Nut **[93]** and M12 Lock Nut **[92]** to ensure proper movement of the Gear Case **[53]**.
		H. Excessively fast cutting operation speed causes deflection of the Saw Blade, and subsequent uneven cutting.	—	• Reduce cutting operation speed. (Appropriate cutting time for a 100 mm (4") workpiece is 10 – 15 seconds. • Use a Tungsten Carbide Tipped Saw Blade for wood or aluminum (Code No. 959024).
		I. Excessive pressure is applied because of a dull Saw Blade.	—	• Resharpen or replace the Saw Blade.

Item	Phenomenon	Possible Cause (s)	Standard	Countermeasure (s)
	Inaccurate cutting. (Unable to obtain accurate perpendicularity of cut surface.) (Mitered joints cannot be accurately aligned.)	J. The workpiece is not properly secured, and moves during the cutting operation.	—	Secure the workpiece with Vise (A), and check cutting accuracy.
		K. Curved or rough surface of the Workpiece causes workpiece movement during cutting operation.	—	Plane the surface of the workpiece to remove defects, and recheck the cutting accuracy.
2.	Cutting operation results in rough cutting surfaces	A. Excessive deflection of the Saw Blade. (Inherent Saw Blade deflection will cause rough surfaces.)	0.26/ϕ 370	Replace the Saw Blade. (To obtain very fine cutting surfaces, Hitachi's TCT Saw Blade for wood or aluminum (Code No. 959024) is recommended.)
		B. Incorrect selection of Saw Blade, or dull Saw Blade. (While a regular TCT Saw Blade provides faster cutting speed, it also produces rougher surfaces than a TCT Saw Blade for wood or aluminum.)	—	• Replace the regular TCT Saw Blade with a TCT Saw Blade for wood or aluminum (code No. 959024). • Resharpen the Saw Blade.
	A = 0.02/60  Fig. 5	C. Improper perpendicularity between Saw Blade and Turn Table **[87]** causes Saw Blade to cut into workpiece at slightly inclined angle, and cause rough cutting surface.	0.2/190 (Fig. 1)	• Adjust M12 Nut **[93]** and M12 Lock Nut **[92]** to eliminate gap and vibration between Hinge **[119]** and Gear Case **[53]**. • Replace Hinge **[119]** (If damaged or deformed). • Replace Gear Case **[53]** (If damaged or deformed). • Replace Turn Table **[87]** (If damaged or deformed).
		D. Washers (A) and (B) not parallel because of surface defects or other damage.	0.02/60 (Fig. 5)	Remove surface defects from or replace Washer (A) **[28]** and/or Washer (B) **[29]**.
		E. Improper perpendicularity between Vise (B) and the Base Ass'y **[103]** causes improper support of the workpiece.	Within 0.1/80 (Fig. 2)	Adjust or replace Vise (B) **[82]**.
		F. Surface of Vise (B) uneven and causes improper support of the workpiece.	Within 0.1 (Fig. 3)	Replace Vise (B) **[82]**.
		G. Excessively fast cutting operation speed.	—	Reduce cutting operation speed. (Appropriate cutting time for a 100 mm (4") workpiece is 10 – 15 seconds.)
	Fig. 6: Left Bevel Cutting Fig. 7: Right Bevel Cutting	H. When the Saw Blade cuts against the natural grain of the wood workpiece, inferior cutting surfaces are obtained.	—	Cut with the natural grain of the wood workpiece. Fig. 6  Fig. 7  Workpiece Workpiece ◯ ... With Grain (Smooth cutting surface) ✕ ... Against Grain (Cutting surface inferior to with grain.

Item	Phenomenon	Possible Cause (s)	Standard	Countermeasure (s)
	Cutting operation results in rough cutting surfaces.	I. The workpiece is not securely fixed in position.	—	Securely fix the workpiece with Vise (A) **[79]**.
		J. The Turn Table is not securely fixed in position with the Side Handle **[116]**.	—	When performing cutting operations, securely tighten the Side Handle **[116]** without fail to fix the Turn Table in position. (The Ball Index Settings at 0˚, 15˚, 22.5˚, 30˚ and 45˚ are affected by vibration, and are not sufficient to securely fix the Turn Table.)
		K. Excessive looseness or excessive tightening of the turn connection between the Hinge **[119]** and Gear Case **[53]**.	—	Repair or adjust affected parts as described in Item 1. G, above.
		L. Curved or rough surface of the workpiece causes workpiece movement during cutting operation.	—	Plane the surface of the workpiece to remove defects, and recheck the cutting.
		M. Excessive vibration during cutting operation.	—	Check each of Possible Causes A, B, D, J and K, above.